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L1 (fluorescence adj (polarization or anisotropy)) same (dual probe or dual label)

1 L1

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1. Document ID: US 20010046050 A1

L1: Entry 1 of 1

File: PGPB

Nov 29, 2001

PGPUB-DOCUMENT-NUMBER: 20010046050

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010046050 A1

TITLE: Instantaneous dual band fluorescence detection systems

PUBLICATION-DATE: November 29, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hoyt, Clifford C.	Needham	MA	US	

US-CL-CURRENT: 356/417

ABSTRACT:

An apparatus for performing fluorescence detection of two or more biochemical probes and/or fluorescence measurement of fluorescence intensity at two or more spectral bands of light emitted from at least one sample spot is disclosed. The apparatus simultaneously directs emitted fluorescent light from multiple probes and/or at multiple spectral bands to different spots on a single pixelated detector.

L1: Entry 1 of 1

File: PGPB

Nov 29, 2001

DOCUMENT-IDENTIFIER: US 20010046050 A1

TITLE: Instantaneous dual band fluorescence detection systems

Summary of Invention Paragraph (15):

[0015] It is a further object of the present invention to enable performing dual label fluorescence polarization assays to detect single nucleotide polymorphism (SNP).

Summary of Invention Paragraph (21):

[0021] This arrangement can be used for dual band fluorescence assays of all kinds. It is ideal for dual-probe fluorescence polarization assays, since it simultaneously captures all ratios of intensity and of wavelength, eliminating lamp drift between measurements as a source of error. Blocking of the excitation source is achieved by a conventional long-pass filter, a holographic notch filter, or other blocking element, as is known in the art of instrument design. It is further possible to use bandpass or multiband filters to further define the spectral bands, which are primarily set by the birefringent network.

Summary of Invention Paragraph (27):

[0027] This invention is valuable when precise dual-label fluorescence assays and fluorescence polarization assays are needed, as in pharmacogenomics. It is also valuable in taking emission intensity ratios, as in Fluorescence Resonance Energy














Transfer (FRET) and membrane potential experiments.

Detail Description Paragraph (25):

[0065] The ability to obtain fluorescence polarization data in two spectral bands, with high precision in each, is very powerful. Precision is one of the central FIGS. of merit in fluorescence polarization measurements, and also in most spectral band ratios. When performing dual-probe fluorescence polarization measurements, the requirement for precision in both bands is paramount. This is because there is inevitably spectral cross-talk between bands; that is, each probe will emit to some degree into both bands. This places more extreme signal-to-noise demands on the instrument, compared to a single-probe measurement. One must unmix the spectral cross-talk, and determine what proportion of the signal in each band came from which probe, in order to assess the degree of fluorescence polarization in each probe. Techniques for this unmixing and data analysis are taught in co-pending patent application "Multiple Label Fluorescence Polarization Assay System and Method", by the same inventor, filed the same day as this, the contents of which are hereby incorporated in full and made a part of this application.

Detail Description Paragraph (27):

[0067] This invention enables use of dual label fluorescence polarization measurements for single-nucleotide polymorphism (SNP) detection. No other instrument is capable of SNP measurement using fluorescence polarization assays. In this way the present invention makes possible for the first time an improved method of performing SNP assays, that takes advantage of the homogeneous, mix-and-read protocol of fluorescence polarization experiments. This greatly simplifies SNP assays, making them more economical and more reliable than was possible in the prior art using non fluorescent-polarization assays.

Full Title     CLS.1   REF.1  SEQ.1  ATT.1     

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DUALS.DWPI,EPAB,JPAB,USPT,PGPB.	207
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0.21

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 OR DUAL LABEL)

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